

# Hello, I'm Ben Zhao

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Computer Science, Co-op (4A)

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## Skill Summary

Data structures, algorithms, concurrent programming, distributed systems, modelling, AI, ML, Java, Go, C++, Python, networks, git

## Projects

### Neural Evolution Of Feed-Forward Neural Networks

06/19

- Paper investigating neural evolution networks.
- Researched existing techniques used in structurally evolving **neural networks**.
- Investigated capacity for such algorithms to learn strategies and **learn in real-time**.
- Tested different **algorithms** on a simple task to observe how structures evolve.

### Big Brain

09/19

- Used **Tensor-Flow** to develop a recurrent **neural network** to generate fake spam emails.
- Created proof of concept for **AI** generated text.
- Additionally, trained **AI** on tweets to create a tweet generator.

### Covata

Ongoing

- Portfolio optimizer made in **Go**
- Implemented simplex algorithm to **optimize** portfolio against a target allocation

## Fun

Dancing, climbing, swimming, skating, dungeons and dragons, and boardgames.

## Experience

### Okta—Software Engineer

05/20 - CURRENT

- Designing and implementing a threat detection model for **cloud** identity services.

### Arctic Wolf Networks—Software Engineer

09/19 - 12/19

- Developed linux version of multi-platform agent in **Go** which monitors and audits computer activity.
- Used **Docker** and **Make** to automate build and package processes.
- Agent enforces persistent firewall rules to selectively block ports and networks.
- Developed, debugged, and deployed code for **distributed computing** clusters with shared resources.
- Updated servers to handle caching, parsing, audit processing, and managing device quarantines

### Capital One—Software Engineer

01/19 - 04/19

- Constructed a **Java** library to abstract **graph algorithms** for Amazon Neptune graph database.
- Invented patent-pending architecture for data storage and aggregation used in **modelling** and fraud detection.
- Applied **machine-learning** to model customer behaviour using **Python** and **SciKit-Learn** to determine feasibility of new features.
- Aggregated millions of data entries to engineer properties that feeds into models.

### Imagine Communications—Full Stack Developer

09/17 - 12/17

- Refactored code to execute concurrently using **JavaScript** promises.
- Increased UI responsiveness by bypassing unnecessary **API** calls and handling simple calculations client-side.
- Developed reusable (**DRY**) Angular components to accelerate UI development and enforce a uniform style.
- Optimized **C#** back-end services by reducing size of necessary data.

### Acronym Software—C++ Developer

05/18 - 08/18

- Added a new classification of calculations for structural analysis in civil engineering applications.
- Optimized **data structures** to store and efficiently handle critical data for new calculations.
- Increased code readability of existing code by reorganizing code to be modular and reusable.